

PHB Education

**Government Exam and D. Pharm Exit Exam Preparation
Questions Bank**

Subject: Pharmacognosy

Chapter -4 : Distribution, Identification tests, pharmaceutical applications, isolation, the therapeutic activity of Crude drugs

Topic: Pharmacognosy – Volatile Oils

1–10. Distribution of Volatile Oils

1. Volatile oils are found in:

- A) Only leaves
- B) Only roots
- C) All parts of the plant
- D) Only seeds

Answer: C) All parts of the plant

2. Clove oil is obtained from:

- A) Roots
- B) Leaves
- C) Flower buds
- D) Bark

Answer: C) Flower buds

3. Cinnamon oil is obtained from:

- A) Bark
- B) Seeds
- C) Leaves
- D) Roots

Answer: A) Bark

4. Peppermint oil is obtained from:

- A) Leaves
- B) Flowers
- C) Roots
- D) Seeds

Answer: A) Leaves

5. Eucalyptus oil is obtained from:

- A) Fruits
- B) Leaves
- C) Bark
- D) Roots

Answer: B) Leaves

6. Lemon oil is obtained from:

- A) Seeds
- B) Peel of the fruit
- C) Flowers
- D) Roots

Answer: B) Peel of the fruit

7. Volatile oils of Umbelliferae family occur in:

- A) Oil ducts of fruits
- B) Root hairs
- C) Laticifers
- D) Seed coat

Answer: A) Oil ducts of fruits

8. Mentha belongs to which family?

- A) Lamiaceae
- B) Solanaceae
- C) Rutaceae
- D) Umbelliferae

Answer: A) Lamiaceae

9. Clove belongs to:

- A) Myrtaceae
- B) Lamiaceae
- C) Rutaceae
- D) Asteraceae

Answer: A) Myrtaceae

10. Cinnamon belongs to the family:

- A) Lauraceae
- B) Lamiaceae
- C) Rutaceae
- D) Myrtaceae

Answer: A) Lauraceae

11–20. Identification Tests of Volatile Oils

11. Test for aldehydic volatile oils:

- A) Schiff's reagent test
- B) Ferric chloride test
- C) Millon's test

D) Benedict's test

Answer: A) Schiff's reagent test

12. Phenolic volatile oils give positive result with:

A) Ferric chloride test

B) Molisch's test

C) Benedict's test

D) Ninhydrin test

Answer: A) Ferric chloride test

13. Ketonic volatile oils react with:

A) Brady's reagent (2,4-DNP)

B) Molisch's reagent

C) Barfoed's reagent

D) Fehling's solution

Answer: A) Brady's reagent (2,4-DNP)

14. Esterified volatile oils yield _____ on hydrolysis.

A) Alcohol and acid

B) Aldehyde and ketone

C) Acid and base

D) Phenol and aldehyde

Answer: A) Alcohol and acid

15. Eugenol can be detected by:

A) Ferric chloride test

B) Biuret test

C) Xanthoproteic test

D) Liebermann–Burchard test

Answer: A) Ferric chloride test

16. Optical rotation is used for identification of:

A) Volatile oil isomers

B) Density

C) Melting point

D) Refractive index

Answer: A) Volatile oil isomers

17. Terpenoids can be detected by:

A) Salkowski test

B) Fehling's test

C) Ninhydrin test

D) Benedict's test

Answer: A) Salkowski test

18. Purity of volatile oils is often determined by:

A) Refractive index and optical rotation

B) Titration

C) Density only

D) Solubility only

Answer: A) Refractive index and optical rotation

19. Refractive index is measured using:

A) Abbe refractometer

B) Polarimeter

C) Calorimeter

D) Spectrophotometer

Answer: A) Abbe refractometer

20. Optical activity is measured using:

A) Polarimeter

B) Colorimeter

C) Nephelometer

D) Titrimeter

Answer: A) Polarimeter

21–30. Pharmaceutical Applications

21. Clove oil is used as:

A) Local anesthetic in dentistry

B) Antacid

C) Sedative

D) Diuretic

Answer: A) Local anesthetic in dentistry

22. Peppermint oil is used as:

A) Carminative and flavoring agent

B) Antacid

C) Antipyretic

D) Laxative

Answer: A) Carminative and flavoring agent

23. Eucalyptus oil is used as:

A) Expectorant and antiseptic

B) Laxative

C) Diuretic

D) Antacid

Answer: A) Expectorant and antiseptic

24. Cinnamon oil is used as:

A) Flavoring and antimicrobial agent

B) Sedative

C) Hypnotic

D) Antacid

Answer: A) Flavoring and antimicrobial agent

25. Camphor is used as:

A) Counter-irritant and rubefacient

B) Antacid

C) Diuretic

D) Analgesic

Answer: A) Counter-irritant and rubefacient

26. Thyme oil is used as:

A) Antiseptic

B) Antacid

C) Diuretic

D) Laxative

Answer: A) Antiseptic

27. Volatile oils are widely used in:

A) Aromatherapy and perfumery

B) Metallurgy

C) Fuel industry

D) Food preservation only

Answer: A) Aromatherapy and perfumery

28. Turpentine oil is used as:

A) Rubefacient and counter-irritant

B) Antacid

C) Diuretic

D) Sedative

Answer: A) Rubefacient and counter-irritant

29. Sandalwood oil is used as:

A) Antiseptic in urinary tract infections

B) Analgesic

C) Hypnotic

D) Laxative

Answer: A) Antiseptic in urinary tract infections

30. Volatile oils are also used as:

A) Flavoring agents in pharmaceutical preparations

B) Coloring agents

C) Nutritional supplements

D) Oxidizing agents

Answer: A) Flavoring agents in pharmaceutical preparations

31–40. Isolation of Volatile Oils

31. The common method of isolation of volatile oils is:

A) Steam distillation

B) Maceration

C) Percolation

D) Infusion

Answer: A) Steam distillation

32. Citrus oils are obtained by:

A) Expression method

B) Distillation

C) Extraction

D) Fermentation

Answer: A) Expression method

33. Heat-sensitive volatile oils are extracted by:

A) Solvent extraction

B) Expression

C) Steam distillation

D) Enfleurage

Answer: B) Expression

34. Florentine flask is used for:

A) Separation of oil from water

B) Extraction

C) Maceration

D) Drying

Answer: A) Separation of oil from water

35. Solvents used for volatile oil extraction include:

A) Petroleum ether

B) Methanol

- C) Water
- D) Acetone

Answer: A) Petroleum ether

36. Water remaining after distillation is called:

- A) Aromatic water
- B) Concrete
- C) Resin
- D) Absolute oil

Answer: A) Aromatic water

37. Steam distillation is preferred because:

- A) It avoids decomposition of volatile oils
- B) It increases boiling point
- C) It oxidizes the oil
- D) It dries the oil completely

Answer: A) It avoids decomposition of volatile oils

38. Volatile oils are stored in:

- A) Amber-colored, tightly closed bottles
- B) Open glass containers
- C) Transparent plastic bottles
- D) Metal boxes

Answer: A) Amber-colored, tightly closed bottles

39. Yield of volatile oil depends on:

- A) Temperature, pressure, and moisture
- B) Color of oil
- C) Type of solvent
- D) None of these

Answer: A) Temperature, pressure, and moisture

40. Essential oils are insoluble in:

- A) Water
- B) Alcohol
- C) Ether
- D) Chloroform

Answer: A) Water

41–50. Therapeutic Activity of Volatile Oils

41. Eucalyptus oil acts as:

- A) Expectorant and antiseptic

- B) Antacid
- C) Sedative
- D) Diuretic

Answer: A) Expectorant and antiseptic

42. Clove oil acts as:

- A) Analgesic and antiseptic
- B) Sedative
- C) Hypnotic
- D) Diuretic

Answer: A) Analgesic and antiseptic

43. Peppermint oil acts as:

- A) Carminative and antispasmodic
- B) Antacid
- C) Laxative
- D) Astringent

Answer: A) Carminative and antispasmodic

44. Thyme oil acts as:

- A) Antibacterial and antifungal
- B) Antacid
- C) Diuretic
- D) Laxative

Answer: A) Antibacterial and antifungal

45. Cinnamon oil acts as:

- A) Antimicrobial and flavoring agent
- B) Sedative
- C) Hypnotic
- D) Antacid

Answer: A) Antimicrobial and flavoring agent

46. Lemongrass oil is:

- A) Antimicrobial and insect repellent
- B) Antacid
- C) Laxative
- D) Sedative

Answer: A) Antimicrobial and insect repellent

47. Turpentine oil is used as:

- A) Counter-irritant
- B) Antacid

C) Laxative

D) Diuretic

Answer: A) Counter-irritant

48. Sandalwood oil has:

A) Antiseptic and diuretic properties

B) Laxative

C) Antacid

D) Purgative

Answer: A) Antiseptic and diuretic properties

49. The active constituent of clove oil is:

A) Eugenol

B) Menthol

C) Citral

D) Cinnamaldehyde

Answer: A) Eugenol

50. Menthol obtained from peppermint oil is used as:

A) Cooling and local analgesic agent

B) Sedative

C) Laxative

D) Antacid

Answer: A) Cooling and local analgesic agent

Volatile Oils – Fill in the Blanks (with Answers)

1–10. Distribution of Volatile Oils

1. Volatile oils are also known as **essential oils**.
 2. Clove oil is obtained from the **flower buds** of *Syzygium aromaticum*.
 3. Cinnamon oil is obtained from the **bark** of *Cinnamomum zeylanicum*.
 4. Peppermint oil is obtained from the **leaves** of *Mentha piperita*.
 5. Eucalyptus oil is obtained from the **leaves** of *Eucalyptus globulus*.
 6. Lemon oil is obtained from the **peel** of the fruit.
 7. Volatile oils in Umbelliferae are present in **oil ducts** of fruits.
 8. The family Lamiaceae is rich in **volatile oils**.
 9. Clove belongs to the family **Myrtaceae**.
 10. Cinnamon belongs to the family **Lauraceae**.
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11–20. Identification Tests of Volatile Oils

11. Aldehydic volatile oils respond positively to **Schiff's reagent test**.
 12. Phenolic volatile oils give a **violet color** with ferric chloride solution.
 13. Ketonic volatile oils form **yellow to orange precipitate** with 2,4-DNP reagent.
 14. Terpenoids in volatile oils are identified by the **Salkowski test**.
 15. Esterified volatile oils yield **alcohol and acid** on hydrolysis.
 16. Eugenol gives a **blue-violet color** with ferric chloride solution.
 17. Optical rotation is measured using a **polarimeter**.
 18. Refractive index of volatile oil is determined by **Abbe refractometer**.
 19. The purity of volatile oil can be tested by **physical constants** such as specific gravity and refractive index.
 20. Volatile oils are **insoluble in water** but soluble in organic solvents.
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21–30. Pharmaceutical Applications of Volatile Oils

21. Clove oil is used as a **local anesthetic and antiseptic** in dentistry.
22. Peppermint oil acts as a **carminative and flavoring agent**.
23. Eucalyptus oil acts as an **antiseptic and expectorant**.
24. Cinnamon oil is used as a **flavoring and antimicrobial agent**.
25. Thyme oil is used as an **antiseptic** in mouthwashes and gargles.
26. Camphor is used as a **counter-irritant and rubefacient**.
27. Volatile oils are used in **aromatherapy** due to their fragrance.
28. Turpentine oil is used as a **counter-irritant and rubefacient**.
29. Sandalwood oil is used as an **antiseptic in urinary tract infections**.

30. Lemongrass oil is used as an **insect repellent and antimicrobial**.

31–40. Isolation of Volatile Oils

31. The most common method for isolation of volatile oils is **steam distillation**.
 32. Citrus oils are obtained by **expression** method.
 33. Heat-sensitive volatile oils are extracted by **cold expression**.
 34. Solvent extraction of volatile oils uses **petroleum ether** or **benzene**.
 35. The apparatus used to separate oil from water is called a **Florentine flask**.
 36. The water layer obtained after distillation is known as **aromatic water**.
 37. The term **absolute oil** refers to highly concentrated essential oil.
 38. Volatile oils should be stored in **amber-colored, tightly closed bottles**.
 39. Steam distillation prevents **decomposition** of volatile oils.
 40. Yield of volatile oil depends on **temperature, pressure, and plant part used**.
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41–50. Therapeutic Activity of Volatile Oils

41. Eucalyptus oil has **antiseptic and expectorant** activity.
42. Clove oil shows **analgesic and antiseptic** action due to eugenol.
43. Peppermint oil shows **antispasmodic and carminative** activity.
44. Thyme oil is used for its **antibacterial and antifungal** activity.
45. Cinnamon oil has **antimicrobial and flavoring** properties.
46. Lemongrass oil acts as an **insect repellent**.
47. Turpentine oil is used as a **rubefacient and counter-irritant**.
48. Sandalwood oil is used as a **urinary antiseptic**.
49. The chief active constituent of clove oil is **eugenol**.
50. The chief active constituent of peppermint oil is **menthol**.



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